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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,951	09/30/2003	Brian D. Lewis	H26911 US	8140

7590 07/12/2004

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EXAMINER	
ALLEN, ANDRE J	

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/676,951	LEWIS, BRIAN D.	
	Examiner	Art Unit	
	Andre J. Allen	2855	

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *app. as filed 9-30-03*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1,3-8 and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown.

Regarding claims 1,8 and 15 Brown teaches a housing (col. 2 line 15) having a fluid conduit for receiving the fluid to be monitored 20, a diaphragm 30 positioned at an end of the fluid conduit (col. 3 lines 25-35) and including at least first and second portions (col. 3 lines 56 and 60) , and a transducer 32 bonded to a surface of the first portion of the diaphragm and including piezoresistive elements (col. 3 lines 30-35), said transducer including electronics for sending and processing said signal (abstract). However Brown does not teach a thickness of

the first portion is less than a thickness of the second portion. Since Brown clearly shows a structure that includes more than one portion (col. 3 lines 54-60), Lacking any criticality it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dimensions of the diaphragm portion in whatever sizes and thickness parameters that are the most efficient depending on the intended use of the diaphragm for the purpose of effectively sensing a pressure applied to a diaphragm structure.

Regarding claims 3,10 and 16 Brown teaches a diaphragm 30 and a pressure transducer 32 is mounted to said diaphragm by a bonding 26 34 process. Brown does not teach a steal diaphragm nor a bonding method using heat. Since Brown at least teach the elements as claimed it would have been obvious to one having ordinary skill in the art to implement whatever material available in the art for the diaphragm for the purpose of providing a flexible structure to receive a fluid pressure since it has been held to be within the general skill of a worker to select a known material on the basis of its suitability for the intended use. In re Leshin, 125 USPQ 416 Also, since Brown at least teaches a means to bond the elements lacking any criticality it would have been obvious to use whatever bonding methods available to the manufacturer at the time the device was assembled for the purpose of permanently coupling two elements together.

Regarding claims 4-6,11-13, and 17-19 Brown does not teach the housing to be cylindrical/tubular, nor is there an explicit teaching of the shape of the first and second portions. As discussed, Brown teaches a housing and first and second

portions. Lacking any criticality, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mold whatever shapes necessary for the housing and first and second portions of the assembly for purpose of creating a pressure sensing device that operates at optimal performance levels.

Regarding claims 7,14 and 20 Brown teaches an isolation means (abstract) (col. 2 lines 15-25) but does not teach a groove on the surface of the first portion to provide this function. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an isolation feature with a groove or seal as taught by Brown for the purpose of protecting parts of the sensor from harsh environments (Brown col. 2 lines 20-25)

2. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Monk.

Regarding claims 2,9 Brown does not teach the transducer mounted on the said transducer is an MEMS. Monk et al teaches said transducer is a MEMS (col. 3 lines 25-35)(col. 4 lines 48-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brown with a mems transducer as taught by Monk et al for the purpose of providing easy assembly and versatility with respect to the size of the transducer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patents 6725724, 6713828, 6444487, 6279402 teach structures that contain mems sensors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre J. Allen whose telephone number is 571-272-2174. The examiner can normally be reached on mon-fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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